

Name: Answer Key

Period: _____

Find the center and radius of each circle.

1. $x^2 + y^2 = 36$

center (0,0) $r=6$

2. $(x-2)^2 + (y-7)^2 = 49$

(2,7) $r=7$

3. $(x+1)^2 + (y+6)^2 = 16$

(-1,-6) $r=4$

4. $(x+3)^2 + (y-11)^2 = 12$

(-3,11) $r = \sqrt{12} = 2\sqrt{3}$

Write the standard equation of each circle: $(x-h)^2 + (y-k)^2 = r^2$

Fill in h, k, r

5. center (0,0); $r=7$

$(x-0)^2 + (y-0)^2 = 49$

6. center (4,3); $r=8$

$(x-4)^2 + (y-3)^2 = 8^2$

7. center (5,3); $r=2$

$(x-5)^2 + (y-3)^2 = 2^2$

8. center (-5,4); $r = \frac{1}{2}$

$(x+5)^2 + (y-4)^2 = \frac{1}{4}$

9. center (-2,-5); $r = \sqrt{2}$

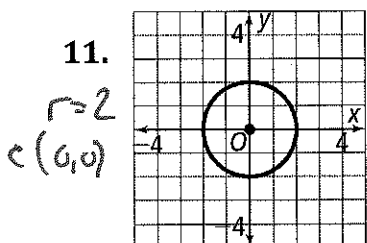
$(x+2)^2 + (y+5)^2 = 2$

10. center (-1,6); $r = \sqrt{5}$

$(x+1)^2 + (y-6)^2 = 5$

Write the standard equation of each circle.

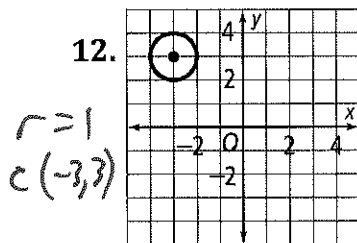
11.



$r=2$
 $c(0,0)$

$x^2 + y^2 = 2^2$

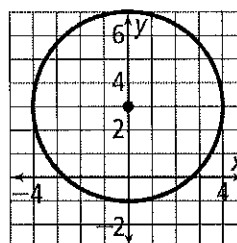
12.



$r=1$
 $c(-3,3)$

$(x+3)^2 + (y-3)^2 = 1$

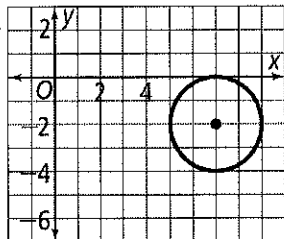
13.



$r=4$
 $c(0,3)$

$x^2 + (y-3)^2 = 16$

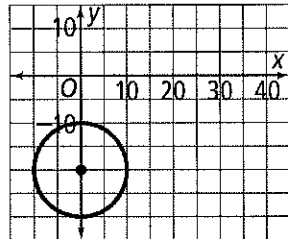
14.



$r=2$
 $c(7,-2)$

$(x-7)^2 + (y+2)^2 = 2^2$

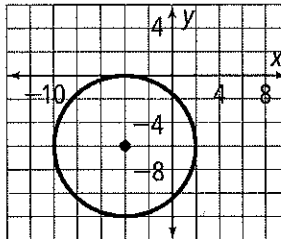
15.



$r=20$
 $c(0,-20)$

$x^2 + (y+20)^2 = 400$

16.



$r=6$
 $c(-4,-6)$

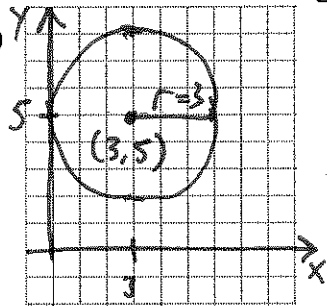
$(x+4)^2 + (y+6)^2 = 36$

Find the center and radius of each circle. Then graph the circle.

17. $(x-3)^2 + (y-5)^2 = 9$

$C(3, 5)$

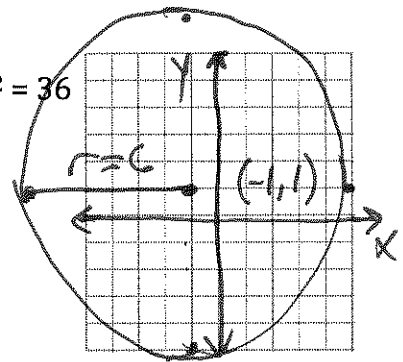
$r = 3$



18. $(x+1)^2 + (y-1)^2 = 36$

$C(-1, 1)$

$r = 6$



Write the standard equation of the circle with the given center that passes through the given point. (Remember that you need the point to find the radius!) $(x-h)^2 + (y-k)^2 = r^2$

21. center $(0, 0)$; point $(3, 4)$

$x^2 + y^2 = 25$

22. center $(5, 9)$; point $(2, 9)$

$(2-5)^2 + (9-9)^2 = r^2$
 $9 = r^2$

$(x-5)^2 + (y-9)^2 = 9$

23. center $(-4, -3)$; point $(2, 2)$

$(2+4)^2 + (2+3)^2 = r^2$

$6^2 + 5^2 = r^2$

$61 = r^2$

$(x+4)^2 + (y+3)^2 = 61$

24. center $(7, -2)$; point $(-1, -6)$

$(-1-7)^2 + (-6+2)^2 = r^2$

$64 + 16 = r^2 = 80$

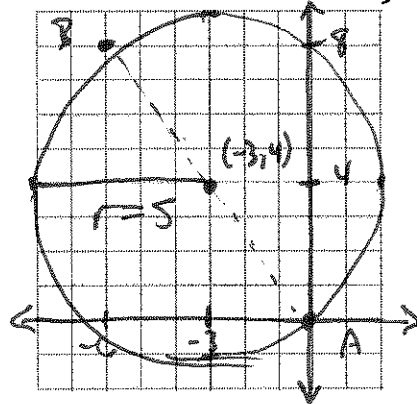
$(x+1)^2 + (y+6)^2 = 80$

Write an equation of a circle with diameter \overline{AB} . (Hint: use the distance formula.) Sketch the graph.

25. $A(0, 0), B(-6, 8)$

$d = \sqrt{(-6)^2 + (8)^2}$
 $= \sqrt{36 + 64} = \sqrt{100}$
 $= 10 ; r = 5$

$(x+3)^2 + (y-4)^2 = 25$



26. $A(7, 5), B(-1, -1)$

$d = \sqrt{(-1-7)^2 + (-1-5)^2}$
 $= \sqrt{(-8)^2 + (-6)^2}$
 $= \sqrt{64 + 36} = \sqrt{100} = 10 ; r = 5$

$(x-3)^2 + (y-2)^2 = 25$

